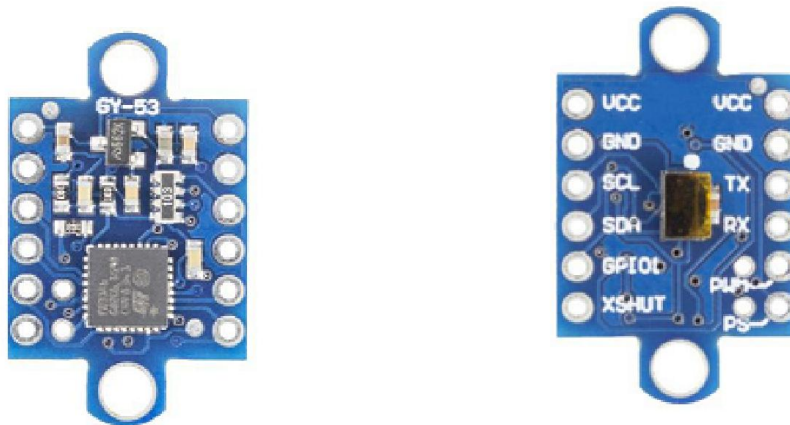


GY-53 VL53L0X Laser ToF Flight Time Range Sensor Module Serial PWM Output

Introduction



GY-53 is a low cost digital infrared distance measurement sensor module. It's working voltage is 3~5V, and it has many advantages: low power consumption, small volume, easy to mount. The operating principle is that the light of infrared LED irradiates the object under test before the reflected light being received by MCU. What MCU does is to output distance value by calculating time difference. This module has two modes to read value: one is serial port UART (TTL electrical level) + PWM (Line 1); the other is Chip IIC Mode. The baud rate of serial ports can be 9600bps or 115200bps. The configurable module has two kinds of output modes, continuous output and inquiry output; also, it has power fail safeguard.

Features

- Measure Range: 0~2m;
- Frequency: 22ms (maximum);
- Working Voltage: 3~5V;
- Working Electric Current: 25mA;
- Storage Temperature: -20° ~ 85°;
- Size: 25mm x 15.6mm;
- Sensor Chip: VL53LOX.

Introduction of Pins

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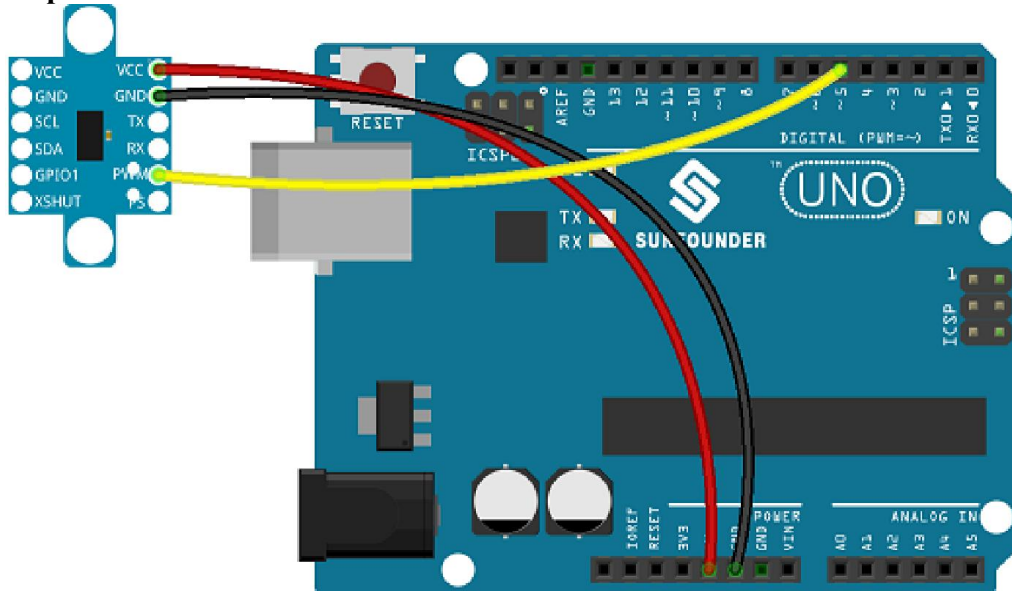
VCC	Power Supply+ (3v-5v)
GND	Ground
TX	Serial Port USART_TX
RX	Serial Port USART_RX
PWM	Distance is converted into the PWM form
PS	Serial Port/IIC Mode Conversion
XSHUT	Chip Pin
GPIO1	Chip Pin
SDA	Chip SDA
SCL	Chip SCL
GND	Ground
VCC	Power Supply+ (3v-5v)

Principle

GY-53 is a low cost digital infrared distance measurement sensor module. It's working voltage is 3~5V, and it has many advantages: low power consumption, small volume, easy to mount. The operating principle is that the light of infrared LED irradiates the object under test before the reflected light being received by MCU. What MCU does is to output distance value by calculating time difference. This module has two modes to read value: one is serial port UART (TTL electrical level) + PWM (Line 1); the other is Chip IIC Mode. The baud rate of serial ports can be 9600bps or 115200bps. The configurable module has two kinds of output modes, continuous output and inquiry output; also, it has power fail safeguard.

Experimental Procedures for Arduino

Step 1: Connect the circuit:



Step 2: Compile and upload the code.

```
int pin =5;
unsigned long duration;
void setup() {
    Serial.begin(9600);
    pinMode(pin, INPUT);
    delay(500);
}

void loop() {

    uint16_t distance=0;
    duration = pulseIn(pin, HIGH);
    distance=duration/10;

    Serial.print("distance: ");
    Serial.print( distance);
    Serial.print(" mm,time: ");
    Serial.print( duration);
    Serial.println("us");
    delay(100);
}
```

The image shows a screenshot of an Arduino IDE serial monitor window. The title bar reads "COM3 (Arduino/Genuino Mega or Mega 2560)". The window contains a list of sensor readings, each on a new line. The readings are: "distance: 1063 mm, time: 10631us", "distance: 1062 mm, time: 10623us", "distance: 1064 mm, time: 10645us", "distance: 1065 mm, time: 10659us", "distance: 1065 mm, time: 10653us", "distance: 1062 mm, time: 10621us", "distance: 1061 mm, time: 10616us", "distance: 1059 mm, time: 10595us", "distance: 1036 mm, time: 10364us", "distance: 1064 mm, time: 10648us", "distance: 1064 mm, time: 10642us", "distance: 1042 mm, time: 10428us", "distance: 1041 mm, time: 10414us", and "distance: 1031 mm, ti". The window also features a "Send" button, a scrollbar, and a status bar at the bottom with "Autoscroll" checked, "Newline" selected, and "9600 baud" set.

```
distance: 1063 mm, time: 10631us
distance: 1062 mm, time: 10623us
distance: 1064 mm, time: 10645us
distance: 1065 mm, time: 10659us
distance: 1065 mm, time: 10653us
distance: 1062 mm, time: 10621us
distance: 1061 mm, time: 10616us
distance: 1059 mm, time: 10595us
distance: 1036 mm, time: 10364us
distance: 1064 mm, time: 10648us
distance: 1064 mm, time: 10642us
distance: 1042 mm, time: 10428us
distance: 1041 mm, time: 10414us
distance: 1031 mm, ti
```

Autoscroll Newline 9600 baud